**PED and revenue**

It is a **mistake to conclude that the PED of a straight demand curve is constant all the way down** its length. The elasticity varies as you go from the top of the demand curve and work your way to the bottom.

|  |  |  |
| --- | --- | --- |
| **Price** | **Quantity** | **Total Revenue (PxQ)** |
| 10 | 0 |  |
| 9 | 1 |  |
| 8 | 2 |  |
| 7 | 3 |  |
| 6 | 4 |  |
| 5 | 5 |  |
| 4 | 6 |  |
| 3 | 7 |  |
| 2 | 8 |  |
| 1 | 9 |  |
| 0 | 10 |  |

Read the following instructions *carefully* before answering questions 1 and 2.On graph paper (make sure it is portrait**) draw two sets of axes**, with the axes for a demand curve on the bottom half of the page and the axes to show total revenue on the top half of the page.

It is important that **the ‘x axes’ (quantity demanded) are exactly parallel** to each other and both the same length.

1. On the axes for the demand curve, plot the price and quantity demanded from the table above.
2. On the axes to show total revenue, plot the quantity demanded on the x axis and total revenue on the y.

What you have drawn now shows the **different amount of total revenue, *depending upon* where you are on the demand curve**. This can be used to identify the optimum price in order to maximise revenue.

Using your demand curve and total revenue diagrams, answer the follow:

1. At what price would revenue be maximised for this product?
2. If the current price was £7, what could the firm do in order to maximise revenue?

1. If the current price was £2, what could the firm do in order to maximise revenue?
2. The **section** where lowering the price increases revenue is described as the **‘elastic section’ – label this on your demand curve.**
3. The **section** where lowering the price decreases revenue is described as the **‘inelastic section’ – label this on your demand curve.**
4. The point where these two sections meet would be **the ‘unitary point PED=1’** and at this price/quantity the **revenue is maximised**. Label this on your demand curve.

The following question is unrelated to the diagrams you have just drawn.

A hotel has 75 rooms; it finds that when it charges £130 per night it fills 50 rooms. It calculates that the price elasticity of demand is – 1.5. What will be the change in total revenue if it lowers the price for each room by 20 per cent?

**On the demand curve below, can you illustrate another way of showing revenue?**

**Price**

**Quantity**

**Demand**

Hint: the formula is price x quantity.